TMS-2 PRE-SHIPMENT ACCEPTANCE TESTING

PLANS AND PROCEDURES

(Redword)
(PSAT.)

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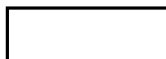
MSB/SED/OJCS _material given 25 Aug 1975_.

Most of the Pre-shipment Acceptance Testing is aimed at testing how MSS processes normal OS jobs; namely, the MSS functions of a-location, ascend, resolving file conflicts, releasing jobs to the host, and deallocation of files and BSS space.

The following areas of MSS activity will not be tested during the PSAT period:

-Any start-up or initialization

-Host binding

-Dispersal

-Security

-Monitoring/Event recording/Accounting

-Recovery

-Most MSS operator commands

The specifics of the PSAT-tested functions are as follows:

1. Allocation/Ascend/Job Bind Processing

-MSS controls the allocation of space on the BSS for files that exist in the MSS.

-Allocation is done serially by job.

-Jobs are eligible for allocation processing if host binding is complete for that job's files and there is at least one file belonging to that job that must be ascended.

-Jobs are selected for allocation processing by priority, FIFO within priority.

-MSS selects BSS volumes for allocation in a round-robin fashion.

-If there is not enough space to allocate all of a job's files, allocation is suspended for this job and blocked for other jobs and the deallocation process is activated. Allocation continues with the suspended job.

-If a requested file is not within MSS or on the BSS, MSS cancels that job.

-Ascends are segmented, with the segment being changeable from 1 cylinder to 403 cylinders.

-Files are not ascended if a copy is already on the BSS or on the way to the BSS.

-If a job requires a file already on the BSS, the file is bound to the job when all job/host/ file contention has been resolved.

-MSS ensures that all of a job's files are bound to that job before that job is released for execution on the host.

-Jobs are selected for binding based on priority, FIFO within priority.

-A job is eligible to have files bound to it when all of its files are eligible.

-MSS recognizes when the last ascension for a job completes.

-A file is bound to a job if it is not bound to any other job, or it is bound to one or more jobs and all jobs request DISP=SHR.

-MSS compares the most restrictive DIPS parameter for a file within a job with the most restrictive DISP parameter for that file within other jobs on the same host.

-If any of a job's files cannot be bound to that job, no files are bound to that job.

-If a job is waiting for a file that the host deletes (via another job), that job is cancelled.

2. Job Termination Processing

-When a job ends normally, the MST sends a 'job ended' message to MSS. MSS must then

. delete from the MSS that job's files that are no longer on the BSS

. unbind all files from that job

. recognize those files that need to be descended

-MSS supports job cancellation by the Host. MSS
takes different action, depending action, depending
on when the job is cancelled:

*   .If a job is cancelled before MSS receives the
        "start setup" message, MSS purges the job. No
        files are affected.

        .If the job is cancelled after receipt of the
        "start setup" message, but before receipt of
        the "execution has begun" message, MSS must purge
        the job after restoring that job's files to
        their state before the job, i.e.

             -delete file names for DISP=NEW files
             -delete file names for DISP=MOD files that
              did not exist before the job

        * -recognize that files whose ascension was
             initiated·by this job do not need to be
             descended during the deallocation process
           -unbind all files from the job

* Not tested at PSAT

3. Deallocation/Descend Processing

- Descension is triggered only by the deallocation process.

- Files to be descended may have more than 1 extent.

- MSS checks files for possible deallocation on an LRU basis

- A file is eligible for deallocation only if it is not being used or waited for.

- After the physical descend occurs, MSS checks again to see if a file is eligible for deallocation.

- MSS deallocates space on a particular BSS volume when the free space on that volume reaches a minimum amount, and continues until the free space on that volume reaches a maximum amount. This deallocation process involves one BSS volume, and the allocation process is not blocked during this activity.

- MSS deallocates space on the BSS when a job cannot get enough space allocated. This deallocation continues until there is enough free space on the BSS for the job being allocated. Allocation is blocked while this deallocation is taking place.

- The "Flush Unit" command causes MSS to deallocate all of the space on the specified volume only. Allocation is not blocked while this deallocation is taking place.

4. MSS Operator Commands

- Display file

- Display job

- Monitor files

- Monitor jobs

- Flush unit

- Delete file

- Rename file

- Display address

- Change address

- Dump address

5. TBMTAPE Management

- Demarking of TBMTAPES is done automatically
  when a bad block is encountered during a write
  operation, and the write operation, and the
  write operation is re-done.

- MSS keeps information on its private disks about
  all TBMTAPES

    . volume label

    . name, location, and size of every file on the
      TBMTAPE

    . number of files on the TBMTAPE

    . transport/tape alignment parameters

    . amount and location of free space

    . number and location of demarked blocks

6. File Management

- MSS keeps information on its private disks about
  each version of each file in MSS

    . file name

    . volser of the TBMTAPE containing the file

    . TBMTAPE block number of the beginning of
      the file

    . file size

- Each time a file is moved, this information
  is updated.

The next pages describe the Redwood City Pre-Shipment Acceptance
Tests of TMS-2. The steps to be followed are numbered and
include the procedure, number of files used in each step, BSS
cylinder requirements by job and step, the run time of each
job, the expected MSS action, and the verification process.

After the test descriptions, there is a Testing Functional
Checklist, which is kept as a record of what specific functions
or combination of functions have been tested.